

**Notice of Allowability**

Application No.

10/693,302

Applicant(s)

RATHAKRISHNAN ET AL.

Examiner

BELIX M. ORTIZ

Art Unit

2164

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/17/2008.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>4/1/2008</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date ____     | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|  | 9. <input type="checkbox"/> Other ____.  |

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. The following is an Examiner's statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose, make obvious, or otherwise suggest the structure of the applicant's prediction program, prediction apparatus, and prediction method together with the other limitations of the independent claims.

The dependent claims being further limiting and definite are also allowable. Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Authorization for this examiner's amendment was given in an interview with Bryan T. Giles on April 1, 2008.

### **AMENDMENT TO THE CLAIMS:**

Claims 1 and 15 have been amended. Claims 1-22 remain pending in the application.

### **WHAT IS CLAIMED IS:**

1. (Currently Amended) A computer implemented method of updating values in a complex structured type column in a relational database system, the method comprising:

representing modifications to a subset of a plurality of values in the complex structured type column using a data structure, wherein the plurality of values in the complex structured type column are embedded in a hierarchy having a plurality of levels within at least one row of

the complex structured type column, wherein the subset of the plurality of values are embedded at arbitrary levels within the hierarchy;

aggregating changes to the subset of the plurality values at the arbitrary levels in the complex structured type column;

computing the data structure in response to a data modification statement on the database to determine the subset of the plurality values within the complex structured type column to update with the aggregated changes; and

applying the aggregated changes to the subset of the plurality of values in the complex structured type column.

15. (Currently Amended) A computer implemented method of updating values in a collection-valued column in a relational database system, the method comprising:

representing modifications to a subset of a plurality of values in the collection-valued column using a data structure, wherein the plurality of values in the collection-valued column are embedded in a hierarchy having a plurality of levels within at least one row of the collection-valued column, wherein the subset of the plurality of values are embedded at arbitrary levels within the hierarchy, and wherein the data structure aggregates changes to the subset of the plurality of values at the arbitrary levels inside the collection-valued column;

computing the data structure in response to a data modification statement on the database to determine the subset of the plurality of values within the collection-valued column to update with the aggregated changes; and

applying the aggregated changes to the subset of the plurality of values in the collection-valued column.

***Reasons for Allowance***

2. Claims 1-22 are allowed.

3. The following is a statement of reasons for the indication of allowable subject matter: the prior arts of records, neither anticipates nor renders obvious the following limitations as claimed:

As to claims 1, 8, 15, and 18, the prior art of records fail to anticipate or suggest representing modifications to a subset of a plurality of values in the complex structured type column using a data structure, wherein the plurality of values in the complex structured type column are embedded in a hierarchy having a plurality of levels within at least one row of the complex structured type column, wherein the subset of the plurality of values are embedded at arbitrary levels within the hierarchy;

computing the data structure in response to a data modification statement on the database to determine the subset of the plurality values within the complex structured type column to update with the aggregated changes, together with the other limitations of the dependent claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Belix M. Ortiz whose telephone number is (571)-272-4081. The examiner can normally be reached on moday-friday 9am-5pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Belix M. Ortiz/  
Acting Examiner of Art Unit 2164

April 1, 2008

/Charles Rones/

Supervisory Patent Examiner, Art Unit 2164